

MONOTYPE

34

JANUARY 1958

Technical Bulletin

Duplex mould

(The word "point" is interchangeable with "Didot" throughout the body of this article, but not in the concluding Table.)

For the casting of type bodies larger than 14 pt., many characters, especially those of exotic languages, require .4" x .4" or .4" x .2" matrices, but, as a result of the increase in their size, there is a considerable reduction in the number of matrices which a case can contain.

To minimise this loss of accommodation, those characters that have short ascenders or descenders, or none at all, are now punched in .2" x .2" matrices. But, unless special provision were made, such a matrix could not effectively cover the opening at the top of a mould designed to cast the larger characters.

So that both sizes of matrix can seat adequately, special equipment, including a Duplex Mould, is available; the latter has two blades working in close association to give the mould a top opening that can be either of two sizes, pointwise, depending on whether one blade is withdrawn, or both.

The upper part of the main blade is recessed to accommodate the auxiliary blade which is conveniently operated by a modified form of the low quad mechanism. The essential differences are:—

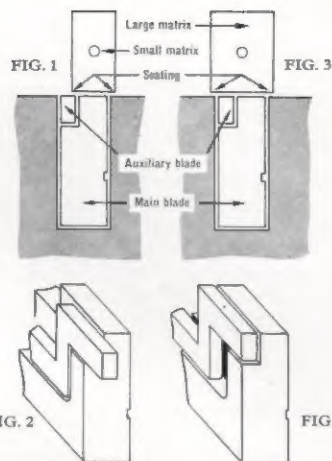
STANDARD MOULD	DUPLEX MOULD
FUNCTION OF AUXILIARY BLADE IS TO <i>seal off mould aperture.</i>	FUNCTION OF AUXILIARY BLADE IS TO <i>regulate width of mould aperture pointwise.</i>
NORMAL POSITION OF AUXILIARY BLADE IS <i>flush with main blade allowing full type-height.</i>	NORMAL POSITION OF AUXILIARY BLADE IS <i>projecting forward of main blade, reducing aperture pointwise.</i>
OPERATED POSITION OF AUXILIARY BLADE IS <i>projecting forward of main blade, giving low quad.</i>	OPERATED POSITION OF AUXILIARY BLADE IS <i>flush with main blade, giving full aperture pointwise.</i>
AUXILIARY BLADE IS OPERATED BY <i>"space" lever, when actuated from centring pin.</i>	AUXILIARY BLADE IS OPERATED BY <i>"character" lever, when signalled by perforations.</i>

Two extra simultaneous punchings of the paper ribbon are normally necessary when the larger aperture of the Duplex Mould is to be used. In addition to the two perforations to select the required matrix, two ('N' and .0075") are required to withdraw the auxiliary blade in step with the main blade. (Incidentally, if a 15 x 17 matrix case is used, a further perforation, 'I' or 'L', is required to give the 'NI' or 'NL' Signal for positioning one of the supplementary rows, the 'N' perforation doing double duty on such occasions.)

On the Keyboard, the multiple punching is done automatically; depressing the key of a character which requires the larger opening of the mould actuates a keybar furnished with four lugs instead of the customary two.

As such keys would offer slightly greater resistance to the Operator's fingers, and disturb the evenness of his "touch", all the keybars (with one or two special exceptions) for exotic faces such as we are considering are made with four lugs, each operating a punch bar, though some of these are not fitted with punches. But where the smaller mould-opening is required, any unwanted perforations (on arrival at the air-tower of the Caster) lift air-pins that, because of their positions in their blocks, are inoperative; the pin jaw 16BB (or 19CC) passes over them on its way to meet the pin jaw 17BB (or 18CC) arrested by the operative air pins. The unwanted perforations may therefore be disregarded.

Concluded overleaf



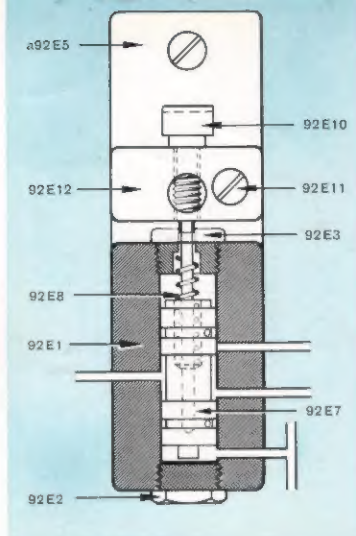
Diagrams that illustrate the function of the Auxiliary Blade of the Duplex Mould. Figs. 1 and 2 show how the Auxiliary Blade projects to provide a seating for a small Matrix. In Figs. 3 and 4 it is retracted to give a full-width casting from a larger Matrix.

It is not necessary to describe here the function of the perforations that select the required matrix, as this is normal routine working.

For the actuation of the auxiliary mould blade, a branch pipe is taken from the 'N' air pipe to operate a valve 92E7 against the pressure of a spring 92E8. When the valve is so moved, it diverts the .0075" air (from its normal duty at the justification pin block) to a mechanical switch. In the switch box 55A1, this air propels a spring-loaded piston 55A4 connected to a diamond-shaped switching plate 55A6A which controls a special selecting lever c16E20; when the actuating lever descends, lever c16E20 is thereby caused to contact the "character" lever of the low quad mechanism. This, being now linked to the auxiliary blade, causes the latter to withdraw with the main blade and give the required larger opening.

When air is admitted either to the 'N' or to the .0075" air pipe alone, the normal function of each is unaffected; there is no sequel to operation of the valve by the 'N' air stream, the piston remains located by its spring, and the switching plate allows the selecting lever to align with the "space" lever. As this has no effect on the auxiliary blade, the latter remains unmoved when the main blade withdraws, and consequently the width of the mould-opening is only that of the main blade less the width of the auxiliary blade.

The result is that there is a sufficient area of contact between the .2" x .2" matrix and the top of the four walls of the mould-

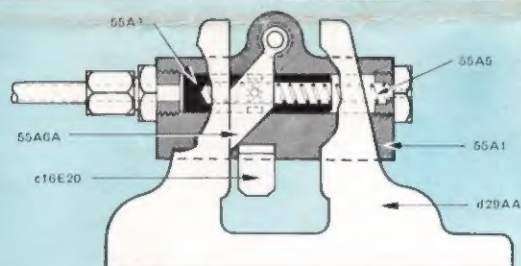


A Sectional View of the Valve Box

- 92E1 Valve Box Body
- 92E2 Bottom Plug (solid)
- 92E3 Top Plug with clearance hole for venting
- 92E5 Holding Plate
- 92E7 Valve
- 92E8 Valve Spring
- 92E10 Screw with extension forming Valve Lock
- 92E11 Clamp Screw locking Screw 92E10
- 92E12 Housing for Screw 92E10

opening (i.e. the main blade (end), auxiliary blade (side), crossblock and mould side block) to give a satisfactory metal-tight seating. Nevertheless, the base of every piece of type has a point size equal to the maximum width of the main blade. The present range of Duplex moulds is as follows :—

NOMINAL SIZE OF CHARACTER	SIZE OF MAIN BLADE BODY	SIZE OF AUXILIARY BLADE	REDUCED SIZE OF MOULD APERTURE
14P	14P	3P	11P
14D	14D	3D	11D
16P	16P	4P	12P
16D	16D	16D less 12P	12P
18P	18P	6P	12P
18D	18D	18D less 12P	12P
21P	21P	9P	12P



- Details of the
Selecting Lever Switch Box
- d29AA Fulcrum Bracket for Duplex Mould
- 55A1 Body of Switch Box
- 55A4 Piston
- 55A5 Piston Spring
- 55A6A Diamond-shaped Switch Plate
- c16E20 Selecting Lever